Magnetic Levitation Station

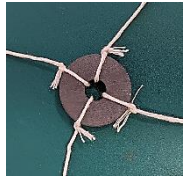
Kit contains:

- 2 ceramic ring magnets
- 4 pieces of string
- 1 cardboard circle
- 1 tiny foam circle

You will need: tape, glue, small weights such as pennies, lightweight toys, a buddy to help, a ruler, and a kitchen scale (optional).

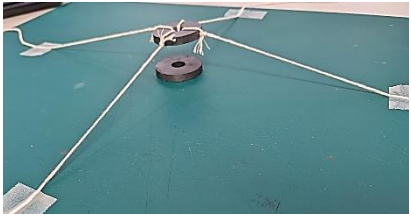
MORTON GROVE PUBLIC LIBRARY
6140 Lincoln Avenue, Morton Grove, IL 60053
Youth Info Desk: 847-929-5102 | mgpl.org

INSTRUCTIONS



Step 1. Tie the four strings through one of the ring magnets as shown.

Step 2. Place your string-free magnet on a flat surface. Hold your stringed magnet above it such that the magnets repel each other. You want to feel the magnets trying to push each other away... but they can't because you are holding on tight!



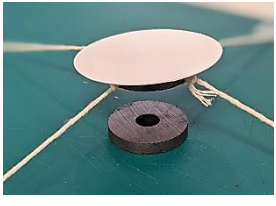
Step 3. Have a buddy pull each of the strings taut and tape them, one by one, to your flat surface. The goal is to tether your magnet in place, levitating in the air. (This step will likely take a few tries.)

Step 4. Assemble your levitation platform. Glue the tiny foam circle to the center of the cardboard circle.

TIME TO EXPERIMENT!

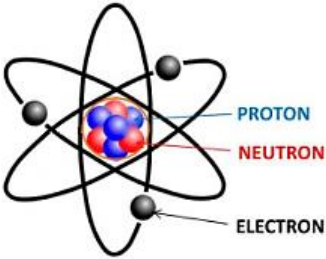
- How high does your top magnet levitate in the air? Measure with a ruler!
- Wave items such as a pencil or this booklet between the two magnets. Does it disrupt the levitation? Does the type of material matter?
- Locate some lightweight toys or household objects. What is the coolest looking thing you can levitate? What is the biggest thing you can levitate?

- Slot the levitation platform, foam circle down, into the top magnet. How many pennies (or other small weights) can you levitate? If you have a kitchen scale, weigh them.



MAGNETISM!

Magnetism is an invisible force or field caused by the unique properties of certain materials. In most objects, electrons spin in different, random directions. This causes them to cancel each other out over time. However, magnets are different. In magnets, the molecules are uniquely arranged so that their electrons spin in the same direction. This arrangement of atoms creates two poles in a magnet, a North-seeking pole and a South-seeking pole.



The magnetic force in a magnet flows from the North pole to the South pole. This creates a **magnetic field** around a magnet.